Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) In a communications network, a method of verifying connectivity between a first node and one or more network nodes, comprising:

providing periodic time intervals at the first node,

counting elapsed periodic time intervals since transmission of a link integrity indication frame to produce a count for the first node, the link integrity indication frame being a frame which, when transmitted by the first node, can be received by the one or more network nodes on the communications network and which contains a source identifier that uniquely identifies the first node;

receiving frames from the one or more network nodes and maintaining during each periodic time interval a node state status and current received frame source identifiers;

determining the node state status upon the expiration of a predetermined elapsed time; and

transmitting [[a]] the link integrity indication frame based upon determining the node state status as not being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval;

wherein, when transmitted, the link integrity indication frame resets the count of each of the first node and the one or more network nodes.

2. (Original) The method of Claim 1, wherein the source identifier is a source address and the current received frame source identifier is a current received frame source address.

3. (Currently amended) The method of Claim 2, wherein counting the elapsed periodic time intervals includes:

incrementing a counter every time a periodic time interval elapses and the first node has not sent [[a]] the link integrity indication frame during the elapsed time interval, and

resetting the counter whenever the first node transmits [[a]] the link integrity indication frame.

4. (Currently amended) The method of Claim 2, wherein maintaining a node state status includes:

establishing a node initial state status upon receipt of a frame from the one or more network nodes ~~on the network~~;

upon receiving a subsequent frame within the predetermined elapsed time interval, comparing the ~~maintained~~ current received frame source address with a subsequent frame source address, and

if the comparing indicates a same source address, the node state status remains unchanged, and

if the comparing indicates a different source address, the node state status changes to being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval and transmitting [[a]] the link integrity indication frame is suppressed.

5. (Previously presented) The method of Claim 2, wherein determining the node state status as not being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval includes providing a logic state machine having a plurality of states including a down state indicative of a non-functional network link and a plurality of up states indicative of functional network links, the states being transitional therebetween based upon predetermined network node status, expiration of periodic timing intervals and receipt of frames by the first node.

6. (Original) The method of Claim 2, wherein maintaining a current received frame source address includes recording the current received frame source address in a memory table.

7. (Previously presented) The method of Claim 2, wherein the first node is a node on a broadcast network.

8. (Previously presented) The method of Claim 2, wherein the first node is a node on a point-to-point network.

9. (Original) The method of Claim 2, wherein the communication network is a multi-layer protocol communication network.

10. (Currently amended) The method of Claim 9, wherein the transmitting of [[a]] <u>the</u> link integrity indication frame is

performed at a data link layer of the multi-layer protocol communication network.

11. (Previously presented) The method of Claim 2, wherein the first node and the one or more network nodes whose connectivity is being verified are connected by transmission medium from the group of telephone wire, shielded twisted pair, unshielded twisted pair, cable, power line, optical fiber, or wireless medium.

12. (Currently amended) In a communications network, a link integrity apparatus for verifying connectivity between a first node and one or more network nodes communicating over a transmission medium, comprising:

a periodic time interval generator;

a counter system for counting elapsed periodic time intervals since transmission of a link integrity indication frame to produce a count for the first node, the link integrity indication frame being a frame which, when transmitted by the first node, can be received by the one or more network nodes on the communications network and which contains a source identifier that uniquely identifies the first node;

a receiver coupled to the transmission medium for receiving frames from the one or more network nodes;

a storage system for maintaining during each periodic time interval a node state status and current received frame source identifiers;

logic circuitry coupled to the counter system, the storage system and the receiver, the logic circuitry determining the node state status upon the expiration of a predetermined elapsed time interval a count of the periodic elapsed time intervals since transmission of [[a]] the link integrity indication frame; and

a transmitter coupled to the logic circuitry and the transmission medium for transmitting [[a]] the link integrity indication frame over the transmission medium based upon determining by the logic circuitry that the node state status as not being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval;

wherein, when transmitted, the link integrity indication frame resets the count of each of the first node and the one or more network nodes.

13. (Original) The link integrity apparatus of Claim 12, wherein the source identifier is a source address and the current received frame source identifier is a source address.

14. (Currently amended) The link integrity apparatus of Claim 13, wherein the counter is incremented by the logic circuitry every time an elapsed time interval expires and the first node has not sent [[a]] the link integrity indication frame during the elapsed time interval, and the counter is reset whenever the first node transmits [[a]] the link integrity indication frame.

15. (Currently amended) The link integrity apparatus of Claim 13, wherein the logic circuitry maintains node state status by:

establishing a node initial state status upon receipt of a frame from the one or more network nodes ~~on the network~~;

upon receiving a subsequent frame within the predetermined elapsed time interval, comparing the ~~maintained~~ current received frame source address with a subsequent frame source address, and

if the comparing indicates a same source address, the node state status remains unchanged, and

if the comparing indicates a different source address, the node state status changes to being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval and transmitting [[a]] the link integrity indication frame is suppressed.

16. (Previously presented) The link integrity apparatus of Claim 13, wherein the logic circuitry functions as a logic state machine having a plurality of states including a down state indicative of a non-functional network link and a plurality of up states indicative of functional network links, the states being transitional therebetween based upon predetermined network node status, expiration of periodic timing intervals and receipt of frames by the first node.

17. (Original) The link integrity apparatus of Claim 13, wherein the memory storage system includes memory table for maintaining a current received frame source address.

18. (Previously presented) The link integrity apparatus of Claim 13, wherein the first node is a node on a broadcast network.

19. (Previously presented) The link integrity apparatus of Claim 13, wherein the first node is a node on a point-to-point network.

20. (Original) The link integrity apparatus of Claim 13, wherein the communication network is a multi-layer protocol communication network.

21. (Currently amended) The link integrity apparatus of Claim 20, wherein the transmitting [[a]] the link integrity indication frame is performed at a data link layer of the multi-layer protocol communication network.

22. (Previously presented) The link integrity apparatus of Claim 13, wherein the first node and the one or more network nodes whose connectivity is being verified are connected by transmission medium from the group of telephone wire, shielded twisted pair, unshielded twisted pair, cable, power line, optical fiber, or wireless medium.

23. - 42. Cancelled.

43. (Currently amended) In a communications network, a method of verifying connectivity between a first node and one or more network nodes, comprising:

providing periodic time intervals;

counting elapsed periodic time intervals since transmission of a link integrity indication frame, the link integrity indication frame being a frame which, when transmitted by the first node, can be received by the one or more network nodes on the communications network and which contains a source identifier that uniquely identifies the first node;

receiving frames from the one or more network nodes and maintaining during each periodic time interval a node state status and current received frame source identifiers;

upon the expiration of a predetermined elapsed time interval determining the node state status and a count of the elapsed periodic time intervals since transmission of [[a]] the link integrity indication frame; and

transmitting [[a]] the link integrity indication frame based upon determining:

the node state status as being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval, and

the count of predetermined elapsed time intervals as being greater than a predefined count limit;

wherein, when transmitted, the link integrity indication frame resets the count of each of the first node and the one or more network nodes on the communications network.

44. (Previously Presented) The method of Claim 43, wherein the source identifier is a source address and the current received frame source identifier is a current received frame source address.

45. (Currently amended) The method of Claim 44, wherein counting the elapsed periodic time intervals includes:

incrementing a counter every time a periodic time interval elapses and the first node has not sent [[a]] the link integrity indication frame during the elapsed time interval, and

resetting the counter whenever the first node transmits [[a]] the link integrity indication frame.

46. (Currently amended) The method of Claim 44, wherein maintaining a node state status includes:

establishing a node initial state status upon receipt of a frame from the one or more network nodes ~~on the network~~;

upon receiving a subsequent frame within the predetermined elapsed time interval, comparing the ~~maintained~~ current received frame source address with a subsequent frame source address, and

if the comparing indicates a same source address, the node state status remains unchanged, and

if the comparing indicates a different source address, the node state status changes to being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval and transmitting [[a]] the link integrity indication frame is suppressed.

47. (Previously presented) The method of Claim 44, wherein determining the node state status as not being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval includes providing a logic state machine having a plurality of states including a down state indicative of a non-functional network link and a plurality of up states indicative of functional network links, the states being transitional therebetween based upon predetermined network node status, expiration of periodic timing intervals and receipt of frames by the first node.

48. (Previously Presented) The method of Claim 44, wherein maintaining a current received frame source address includes recording the current received frame source address in a memory table.

49. (Previously presented) The method of Claim 44, wherein the first node is a node on a broadcast network.

50. (Previously presented) The method of Claim 44, wherein the first node is a node on a point-to-point network.

51. (Previously Presented) The method of Claim 44, wherein the communication network is a multi-layer protocol communication network.

52. (Currently amended) The method of Claim 51, wherein the transmitting of [[a]] the link integrity indication frame is performed at a data link layer of the multi-layer protocol communication network.

53. (Previously presented) The method of Claim 44, wherein the first node and the one or more network nodes whose connectivity is being verified are connected by transmission medium from the group of telephone wire, shielded twisted pair, unshielded twisted pair, cable, power line, optical fiber, or wireless medium.

54. (Currently amended) In a communications network, a link integrity apparatus for verifying connectivity between a first node and one or more network nodes communicating over a transmission medium, comprising:

a periodic time interval generator;

a counter system for counting elapsed periodic time intervals since transmission of a link integrity indication frame, the link integrity indication frame being a frame which, when transmitted by the first node, can be received by the one or more network nodes on the communications network and which contains a source identifier that uniquely identifies the first node;

a receiver coupled to the transmission medium for receiving frames from the one or more network nodes;

a storage system for maintaining during each periodic time interval a node state status and current received frame source identifiers;

logic circuitry coupled to the counter system, the storage system and the receiver, the logic circuitry upon the expiration of a predetermined elapsed time interval determining the node state status and a count of the periodic elapsed time intervals since transmission of [[a]] the link integrity indication frame; and

a transmitter coupled to the logic circuitry and the transmission medium for transmitting [[a]] the link integrity indication frame over the transmission medium based upon determining by the logic circuitry that the node state status as being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval, and the count of predetermined elapsed time intervals as being greater than a predefined count limit;

wherein, when transmitted, the link integrity indication frame resets the count of each of the first node and the one or more network nodes on the communications network.

55. (Previously Presented) The link integrity apparatus of Claim 54, wherein the source identifier is a source address and the current received frame source identifier is a source address.

56. (Currently amended) The link integrity apparatus of Claim 55, wherein the counter is incremented by the logic

circuitry every time an elapsed time interval expires and the first node has not sent [[a]] the link integrity indication frame during the elapsed time interval, and the counter is reset whenever the first node transmits [[a]] the link integrity indication frame.

57. (Currently amended) The link integrity apparatus of Claim 55, wherein the logic circuitry maintains node state status by:

establishing a node initial state status upon receipt of a frame from the one or more network nodes ~~on the network~~;

upon receiving a subsequent frame within the predetermined elapsed time interval, comparing the ~~maintained~~ current received frame source address with a subsequent frame source address, and

if the comparing indicates a same source address, the node state status remains unchanged, and

if the comparing indicates a different source address, the node state status changes to being indicative of having received frames from a plurality of the one or more network nodes during the predetermined elapsed time interval and transmitting [[a]] the link integrity indication frame is suppressed.

58. (Previously presented) The link integrity apparatus of Claim 55, wherein the logic circuitry functions as a logic state machine having a plurality of states including a down state indicative of a non-functional network link and a plurality of up states indicative of functional network links, the states being transitional therebetween based upon

predetermined network node status, expiration of periodic timing intervals and receipt of frames by the first node.

59. (Previously Presented) The link integrity apparatus of Claim 55, wherein the memory storage system includes memory table for maintaining a current received frame source address.

60. (Previously presented) The link integrity apparatus of Claim 55, wherein the first node is a node on a broadcast network.

61. (Previously presented) The link integrity apparatus of Claim 55, wherein the first node is a node on a point-to-point network.

62. (Previously Presented) The link integrity apparatus of Claim 55, wherein the communication network is a multi-layer protocol communication network.

63. (Currently amended) The link integrity apparatus of Claim 62, wherein the transmitting [[a]] the link integrity indication frame is performed at a data link layer of the multi-layer protocol communication network.

64. (Previously presented) The link integrity apparatus of Claim 55, wherein the first node and the one or more network nodes whose connectivity is being verified are connected by transmission medium from the group of telephone wire, shielded twisted pair, unshielded twisted pair, cable, power line, optical fiber, or wireless medium.